2046

M48A3 in Vietnam

David Doyle

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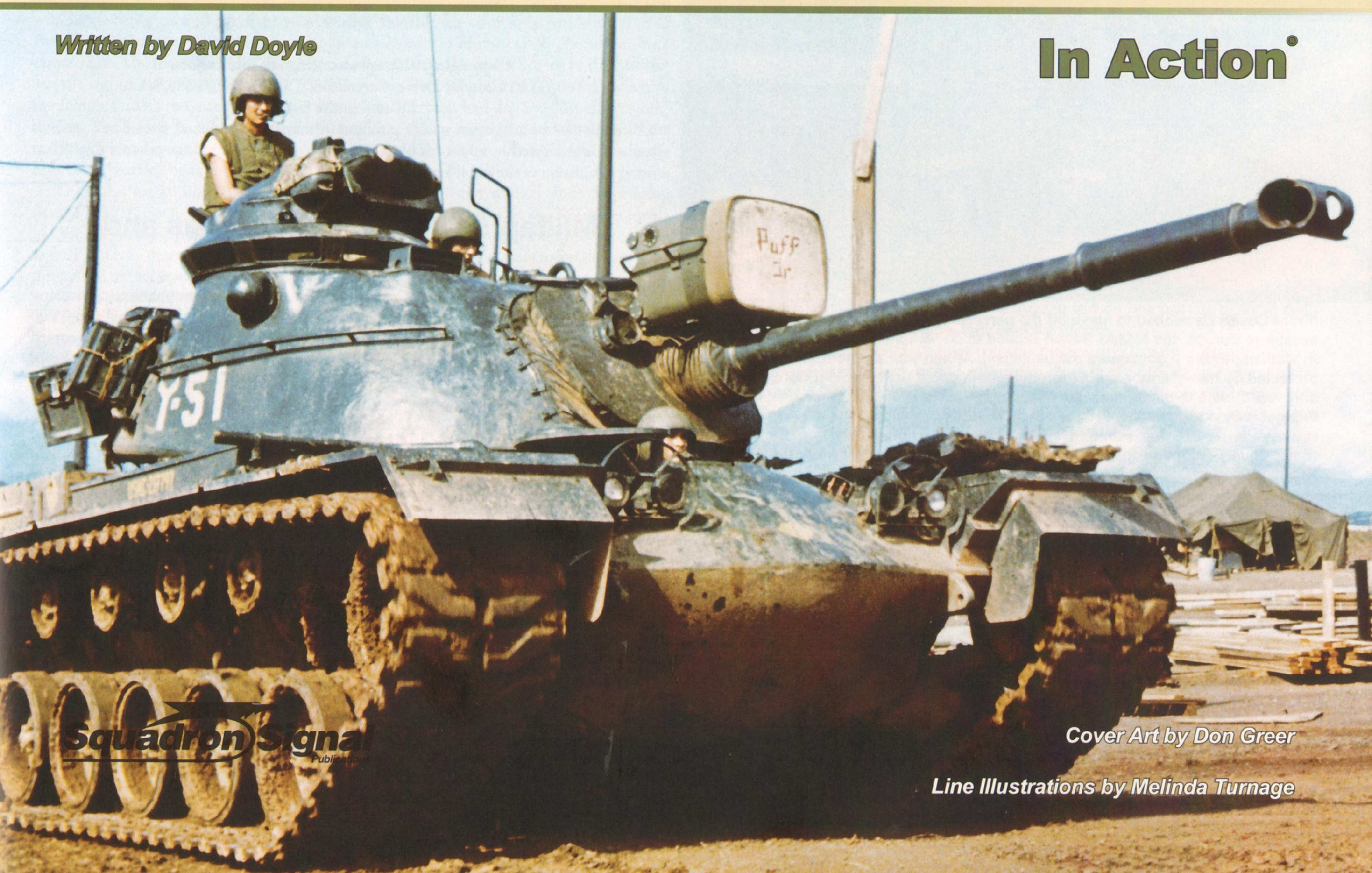
Written by David Doyle

In Action®



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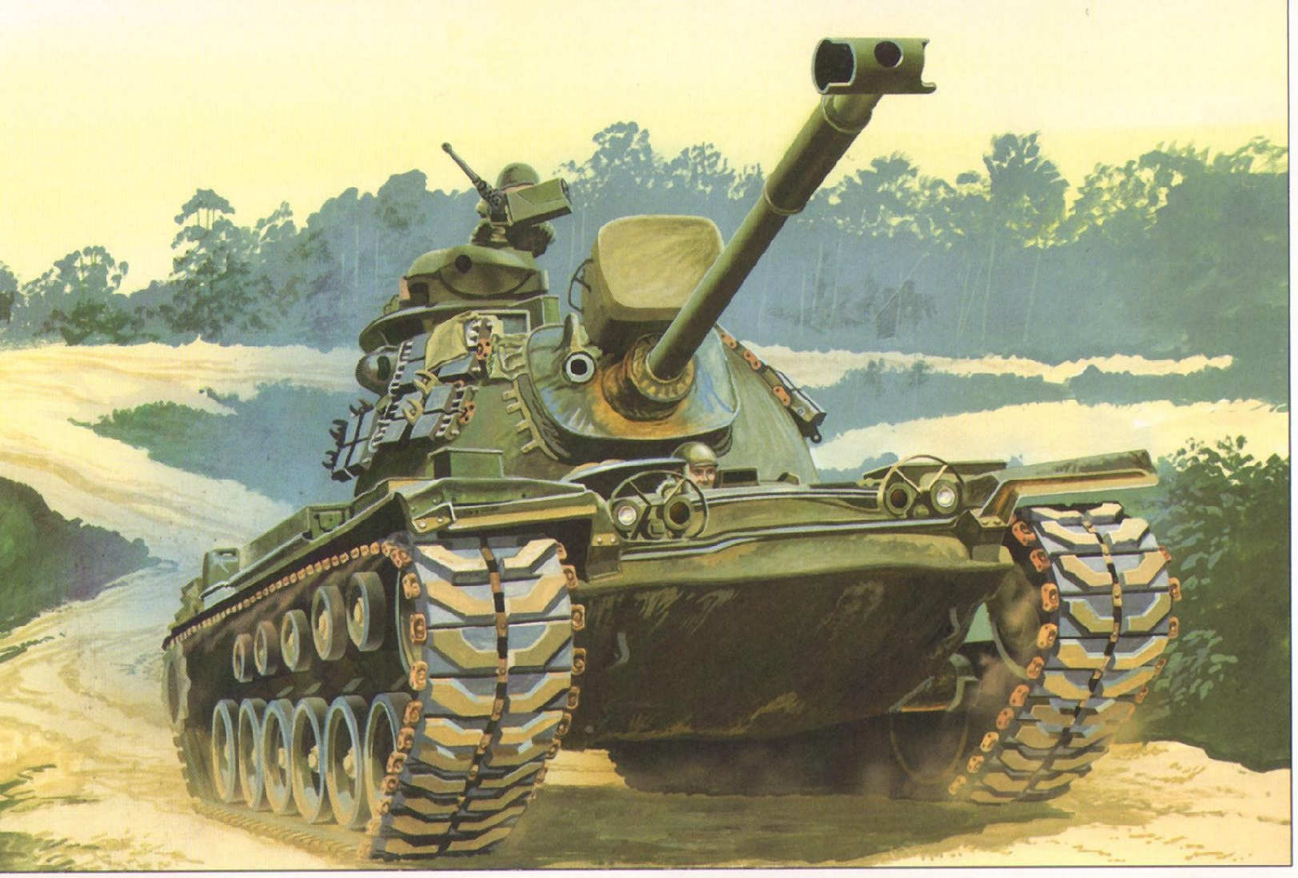

(Front Cover) Developed to stave off the perceived threat of a massed Soviet armored assault in Europe, the M48A3 Patton proved to be well-suited to the rigors of combat in Vietnam, where it dominated the battlefield. Armed with a potent 90mm cannon and protected by heavy armor, the 52-ton behemoth could best any Việt Cộng vehicle, the only real threats to the tankers' survival being Rocket Propelled Grenades, Improvised Explosive Devices, and the wetlands themselves.

(Back Cover) Troops of the 1st Infantry Division ride on an M48A3 of the 4th Cavalry Regiment during Operation Junction City.

About the In Action® Series

In Action® books, despite the title of the genre, are books that trace the development of a single type of aircraft, armored vehicle, or ship from prototype to the final production variant. Experimental or "one-off" variants can also be included. Our first *In Action*® book was printed in 1971.

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(Title Page) With a service life in the American arsenal spanning 30 years, the M48 family of vehicles saw wide use and numerous variants. The bulk of the American combat experience with the vehicle was gained in Vietnam, where the M48A3 variant, and to a lesser extent the M48A2 and M67 versions, were the most menacing vehicles on the battlefield. Both the U.S. Army and the U.S. Marine Corps, as seen here, used the vehicle. This First Marine Division M48A3 in Vietnam carries the name "Puff Jr" on its searchlight cover.

Acknowledgments

All photos, unless otherwise credited, are from the U.S. National Archives and Records Administration.

This work would not have been possible without the generous assistance of Chris Harlow, Don Moriarty, the staff of the National Archives; Patton Museum; Marine Corps Historical Agency; Rock Island Arsenal Museum; TACOM LCMC History Office; the Don F. Pratt Museum, and Denise, who labored alongside me researching this volume.

Introduction

Typically, books in the "in Action" series cover the history of a type of vehicle from conception through deployment. The M48 series of tanks served U.S. forces on the front lines for 30 years, and even longer in some other countries' military forces. This long and worldwide career, as well as the development of the tank, are covered in Jim Mesko's *M48 Patton in Action* as well as Richard Hunnicutt's *Patton: A History of the American Main Battle Tank*. The focus of the volume in hand is instead on the development of the M48A3 variant and its use during the war in Vietnam – arguably the most well-known variant of the family, and its most celebrated use. Just as the Sherman had defined "American tank" during World War II, and just as the Abrams does today, from the mid-1960s into the early 1970s newspaper and television headlines brought images of the M48A3 into the homes of America, making it the quintessential U.S. tank of the era.

The quest for an improved medium tank, which had been studied since the waning days of WWII, reached a new level of urgency when war broke out on the Korea Peninsula in 1950. The stopgap M47 was created by marrying a new air-cooled Continental engine, as well as newly designed T42 turret, to the proven M46 hull and suspension design. The pilot M47 in fact was produced using an M46 hull, although the production vehicles had hulls with increased angle of slope on the front armor.

Chrysler developed an experimental new tank, the T48, beginning in October 1950. Testing of the vehicle began in February 1952. With world tension high, Chrysler was given an order for 548 tanks, and both Ford Motor Company and the Fisher Body Division of General Motors received orders for 400 each, before testing was even completed.

While the T48 used the Continental AV-1790 engine and General Motors CD-850-4 transmission proven in the M46/47, the turret ring was enlarged as a provision for later possible upgunning. Whereas most earlier U.S. tanks had slab-sided turrets, the turret of the T48 was rounded, affording greater ballistic protection. On 2 April 1953, after about 1,000 of the T48 had been produced, the design was classified as Standard by the Ordnance Committee, and the designation changed to "90mm gun tank M48." At the same time it was officially named the Patton 48, honoring WWII General George S. Patton, Jr. Fittingly, Patton's son, also George Patton, would command the 11th Armored Cavalry Regiment in Vietnam, a unit whose expert use of the tank added considerably to its fame.

Throughout the 1950s and early 1960s considerable effort went into upgrading and improving the M48 family, much of this labor centering on increasing the fuel range and improving visibility for the tank commander. These changes resulted in the M48A1 and M48A2 models. By the late 1950s the army and Chrysler were hard at work developing a successor vehicle, the M60. This coincided with the decision to adopt Diesel as the new standard fuel for tanks. Tests conducted with the experimental Diesel-powered M48A2E1 showed the new fuel offered superior economy and far less fire/explosion risk than did the previously used gasoline.

Once the decision was reached to place the Diesel-powered M60 in production, the army looked at retrofitting the powerplant from that tank, featuring the Continental AVDS-1790-2A 12-cylinder engine, into the M48 family. Along with the engine and CD-850-6A transmission, the rear deck and grille doors from the M60 were fitted to the M48A1. The resulting vehicle was the M48A3, and this would be the primary medium tank used by U.S. forces in Vietnam.

The 3rd Platoon, Company B, 3rd Marine Tank Battalion was the first U.S. unit to arrive in Vietnam with tanks, bringing in M48A3s in March 1965. They were followed by more Marine tankers, and in October 1965 the First Squadron, 4th Cavalry, 1st Infantry Division became the first U.S. Army tank unit in Vietnam. In addition to the M48A3, the Marines brought with them the M67A2, which was a flame throwing tank based on the M48A3, and a vehicle that was considerably feared by the Viet Cong (VC). In July 1971 the M48A3 began be supplied to the Army of Republic of Vietnam (U.S. ally South Vietnam), which used its 190 Pattons valiantly and effectively until the very end.

Although many had panned the use of the 52-ton Patton in Vietnam prior to its deployment, field experience proved the vehicle to be a tremendous asset. As seen in this volume, the M48A3 was valued for its thick armor, which protected the crew from deadly Viet Cong mines. Its shear mass allowed it to plow through thick jungle vegetation.

Remarkably, in Vietnam the M48A3 was even attached to Airmobile Divisions. After frequent uncomfortable encounters with VC fortified villages on the plains of Binh Dinh, the First Cavalry requested a tank company. This was furnished by 1st Battalion, 69th Armor, 4th Division based in Pleiku. The tactic used was for one platoon of six to eight tanks to support an infantry battalion and crush the enemy.

Resupply was always a headache for tank operations in Vietnam. Often during the course of a heated battle a tank would exhaust its basic load of 62 rounds of main gun ammunition and 2,000 rounds of .50 caliber. Accordingly, basic loads of tank ammunition were preslung for helicopter delivery and staged at nearby fire support bases prior to assault operations. Tanks could then be resupplied without recourse to slower, perhaps mobility-impaired, trucks.

The American withdrawal from Vietnam was not the end of the M48's service life with the U.S. army. Rather it was upgraded yet again, this time with an increase in armament. M48A5 was the final incarnation of the M48 and it included the mounting of a M68 105mm gun (British L7) – the same weapon that was used in the M60. The final M48A5 featured a low profile, Israeli-type cupola rather than the M1 Cupola/G305 Riser that were present on most of the M48A3s that had served in Vietnam. On the final A5 models, the M48A5 loader was also provided with an M60D MG. Most of the M48A5 production was shipped to National Guard and Reserve units, but a few active U.S. Army battalions in Korea were also issued these. Ultimately, the M48 series was totally withdrawn from U.S. service, with some of the vehicles being scrapped, others sold overseas, and still others dumped into the sea to serve as the basis for artificial reefs.

Dedication

This book is dedicated to the brave men who rode these machines into battle in Southeast Asia.

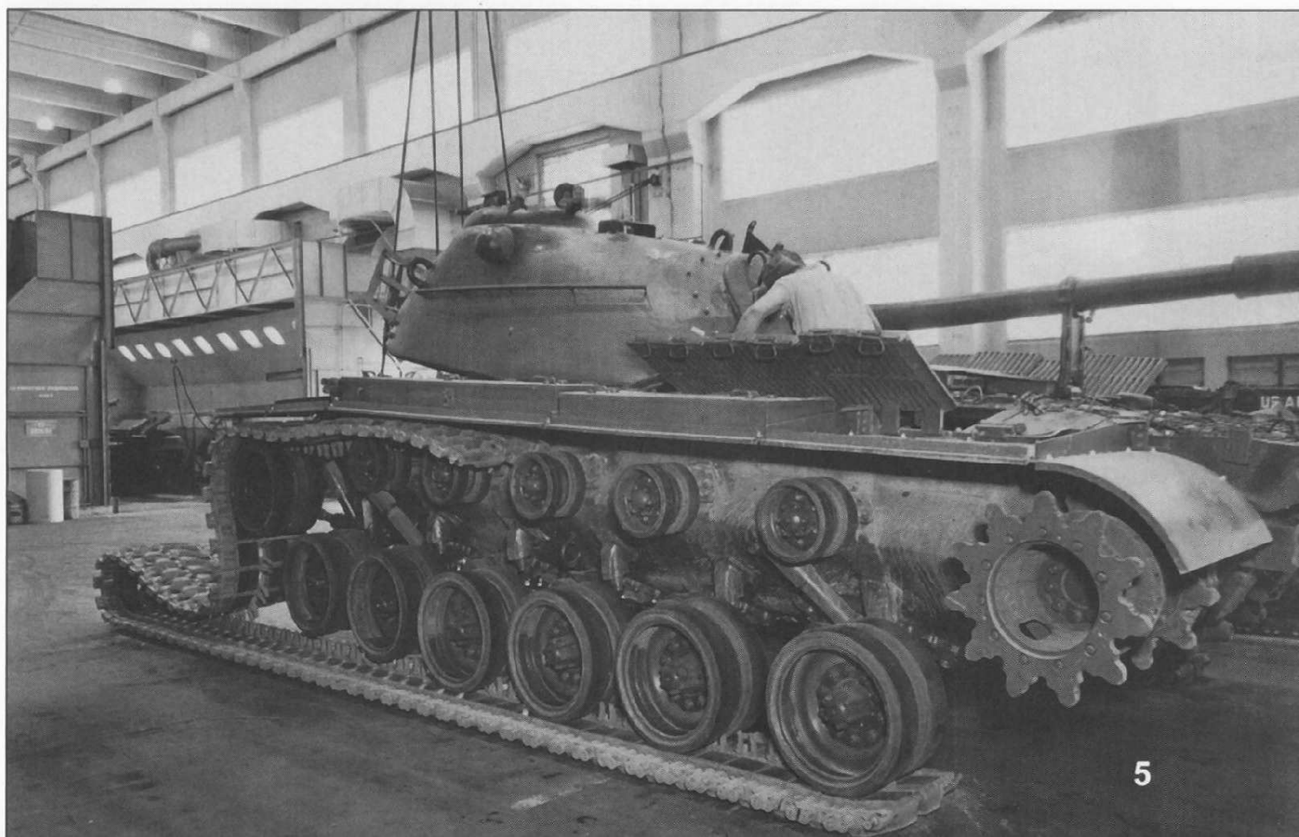
The M48A3 was the mainstay of U.S. heavy armor in Vietnam. Introduced in February 1963, the most significant improvement found in this model was the Continental AVDS-1790-2A Diesel engine. Previous models had been powered with a variety of Continental gasoline engines. (Patton Museum)

The experimental T48 formed the basis for the subsequent M48 medium tank family. While the earlier M47 had been seen as a stopgap, the T48 was to be the tank that Army Field Forces really wanted. This is T48 serial number 2, which was assembled in December 1951. After about 1,000 T48s had been built, the vehicle designation was changed to M48 and it was also named the "Patton 48" on 2 April 1953. (Patton Museum)

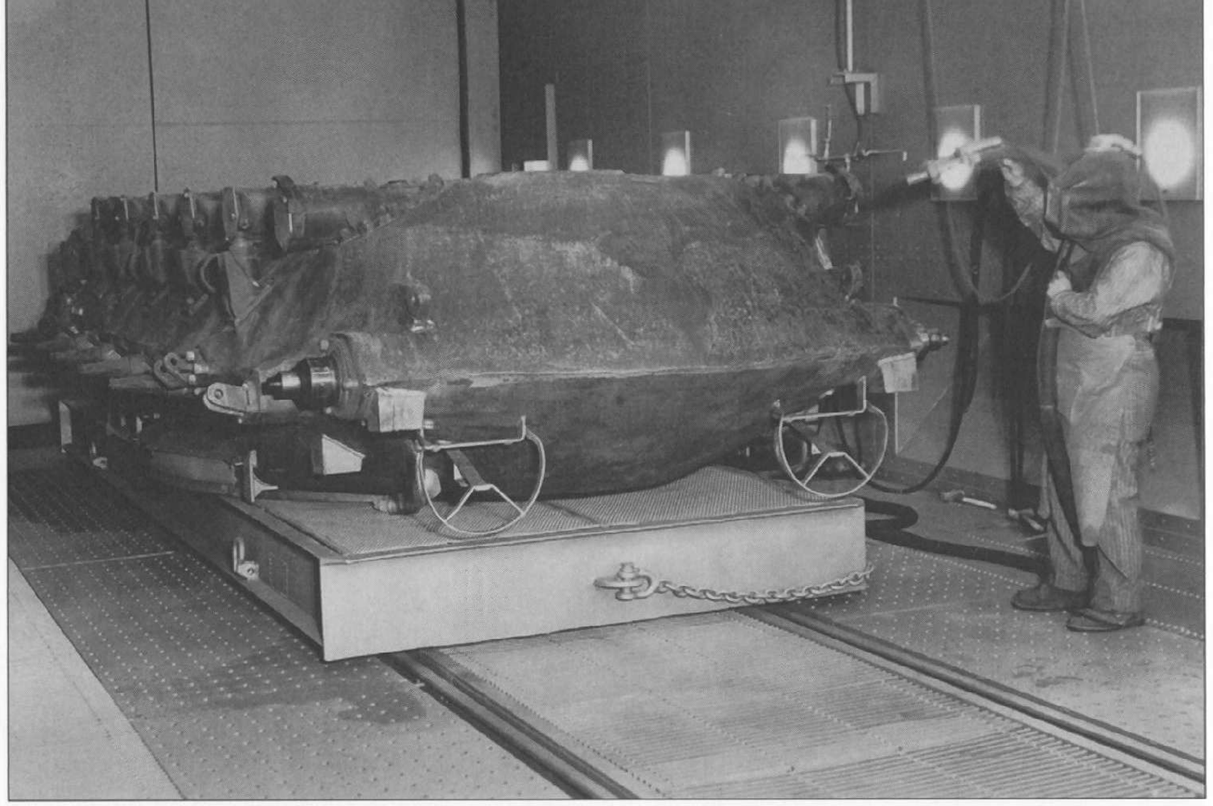
The main armament of the M48 was the 90mm Gun M41, for which 60 rounds of ammunition were carried. Weighing in at 99,000 pounds, the tank was four and a half tons heavier than the weight originally desired by the Army. (Rock Island Arsenal Museum)

With war raging in Korea, Chrysler, Ford and General Motors rushed the new tank into production, circumventing the usual protracted evaluation period before procurement. (Rock Island Arsenal Museum)

By 1963 the Army had decided to go to Diesel-powered tanks, the M48A3 being chief among these. The M48A3s were produced at Anniston Army Depot and Red River Army Depot by converting M48A1 tanks. At about the same time, Rock Island Arsenal rebuilt M48 gasoline-powered tanks for foreign military assistance programs, including this tank about to be reconditioned for shipment to Libya. (Rock Island Arsenal Museum)

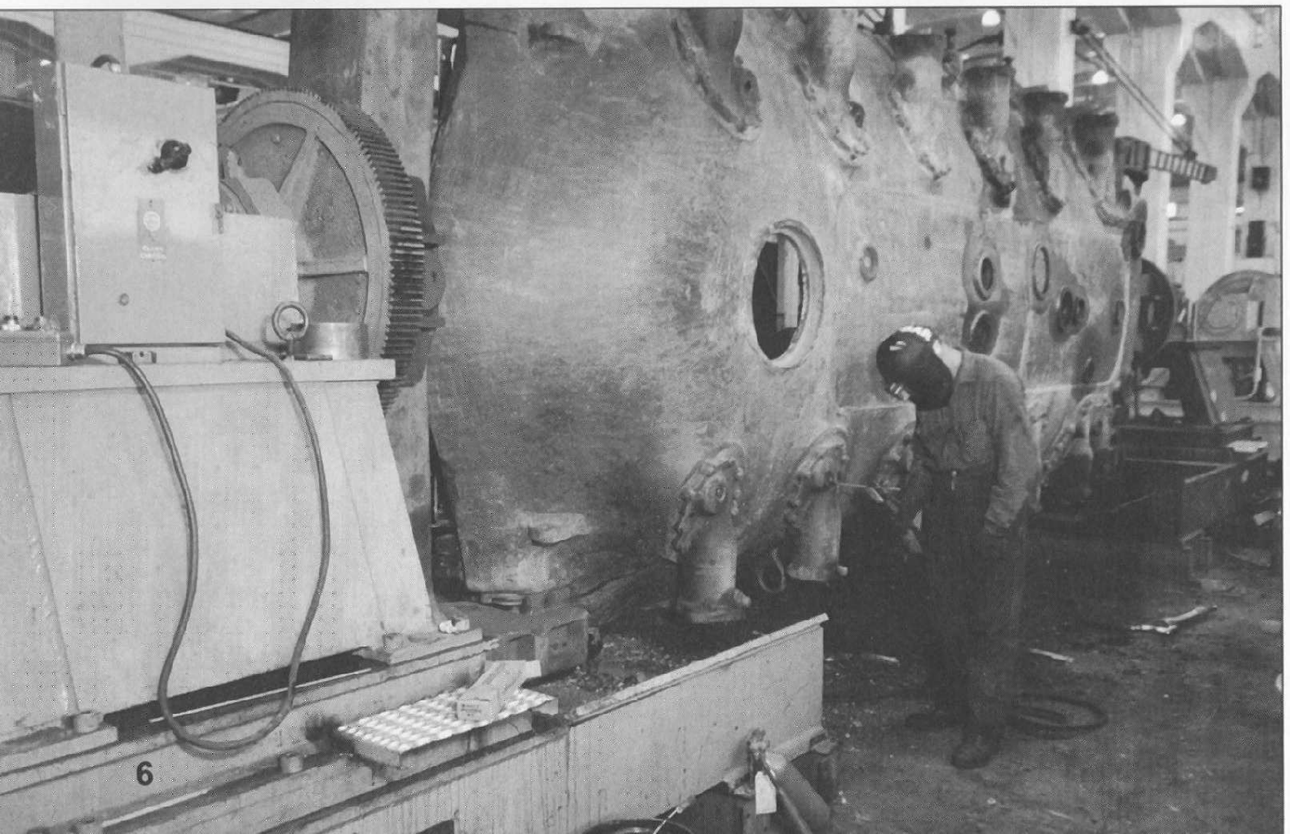


One of the first steps in the rebuild process was draining of lubricants from the powerplant and various gearboxes. The rear hull design of the gasoline powered tanks is clearly evident here. (Rock Island Arsenal Museum)

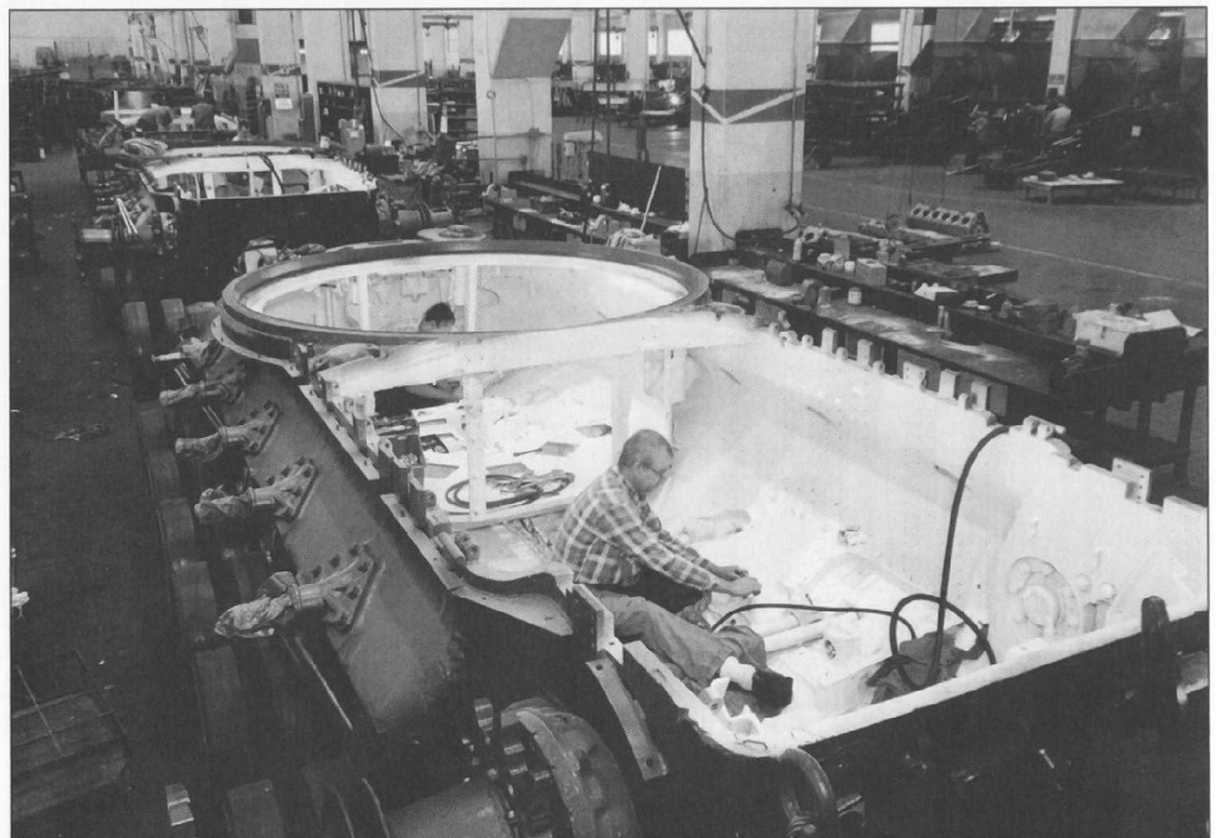


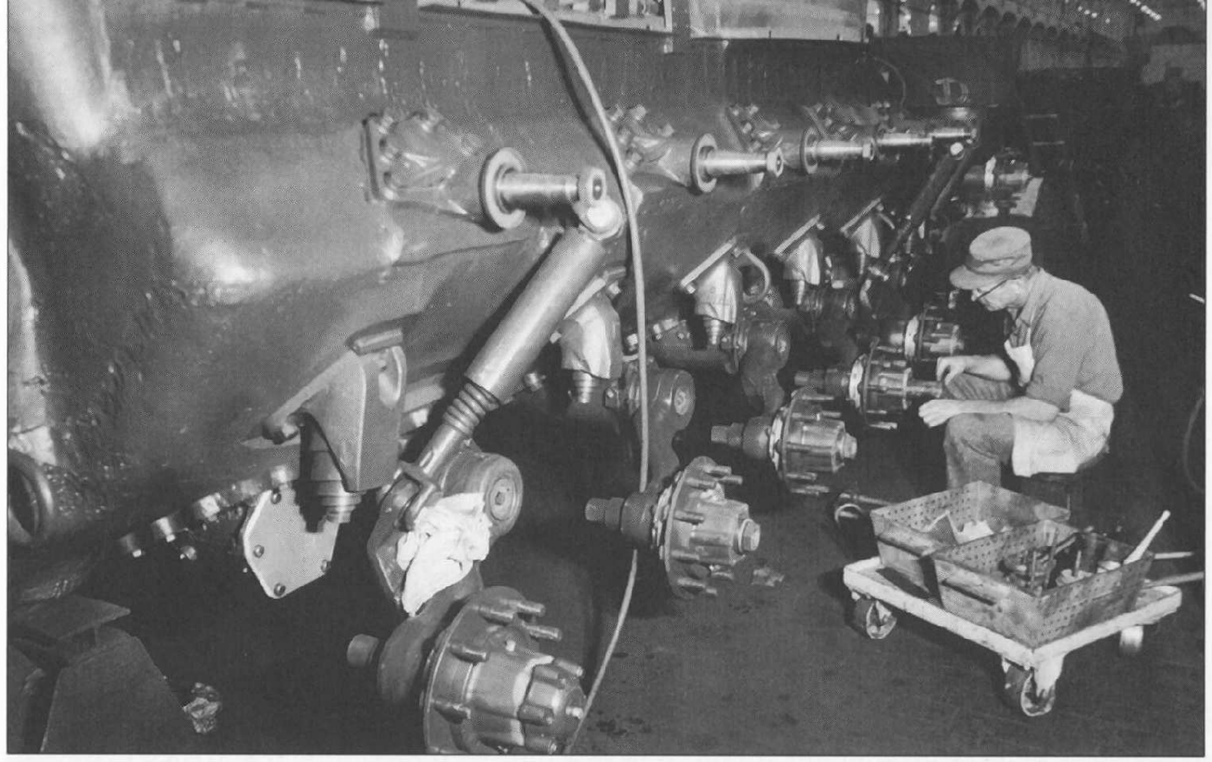
After complete disassembly, the hull was shot blasted to clean it up. Some M48 hulls were produced by single-piece castings, while other hulls were welded together from seven smaller castings. (Rock Island Arsenal Museum)

Large fixtures were used to hold the cleaned hulls securely in place as welders repaired damage and performed modifications during the rebuilding process. The large circular opening in the hull bottom nearest the camera is the driver's escape hatch. (Rock Island Arsenal Museum)

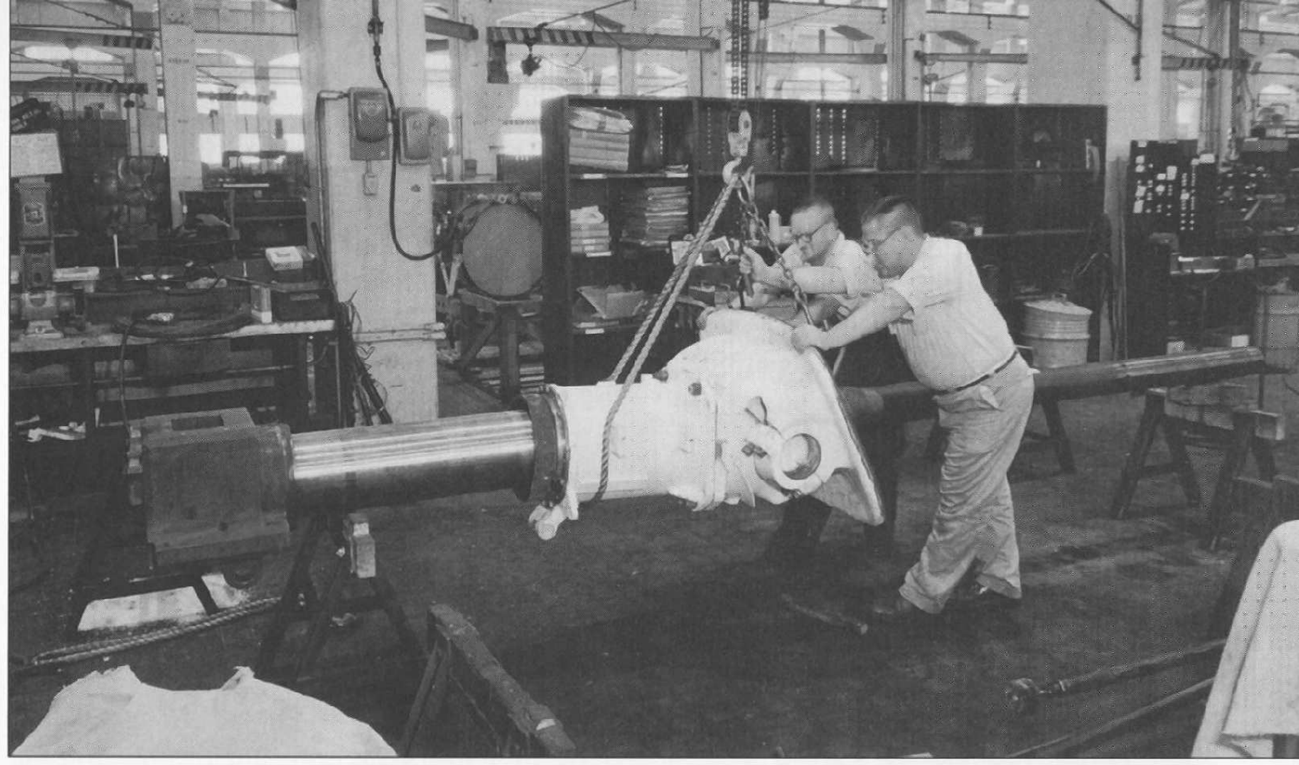


Reconditioned M48 hulls move down the line during the reassembly process. The cast armor hull and turret are among the most expensive components of a tank, and reuse of those components through rebuilding is an economical way of building "new" tanks. (Rock Island Arsenal Museum)





All members of the M48 family rode on torsion bar suspensions. The details of the suspension system show clearly in this photo of an M48 during rebuild. Shock absorbers were mounted on the first two and last road wheels, while the number and placement of track return support rollers varied from model to model. (Rock Island Arsenal Museum)



Turrets and guns were rebuilt on their own assembly lines. All members of the M48 family up until the M48A5 were armed with the 90mm Gun M41 using an M87A1 mount. This mount provided +19° to -9° elevation, while the turret gave 360° traverse. (Rock Island Arsenal Museum)

The Achilles heel of the M48 was the gas-thirsty Continental AV-1790. With this powerplant the 200 gallon fuel tanks gave the M48 a range of only 70 miles. The Diesel-powered M48A3 had a 385 gallon fuel capacity and a range of 300 miles. (Rock Island Arsenal Museum)

The M48A1 was the follow-on vehicle to the M48. These tanks had larger driver's hatches plus sported the new M1 commander's cupola with integral M2 HB machine gun. However, the small size of the cupola greatly limited the machine gun ammunition supply. (TACOM LCMC History Office)

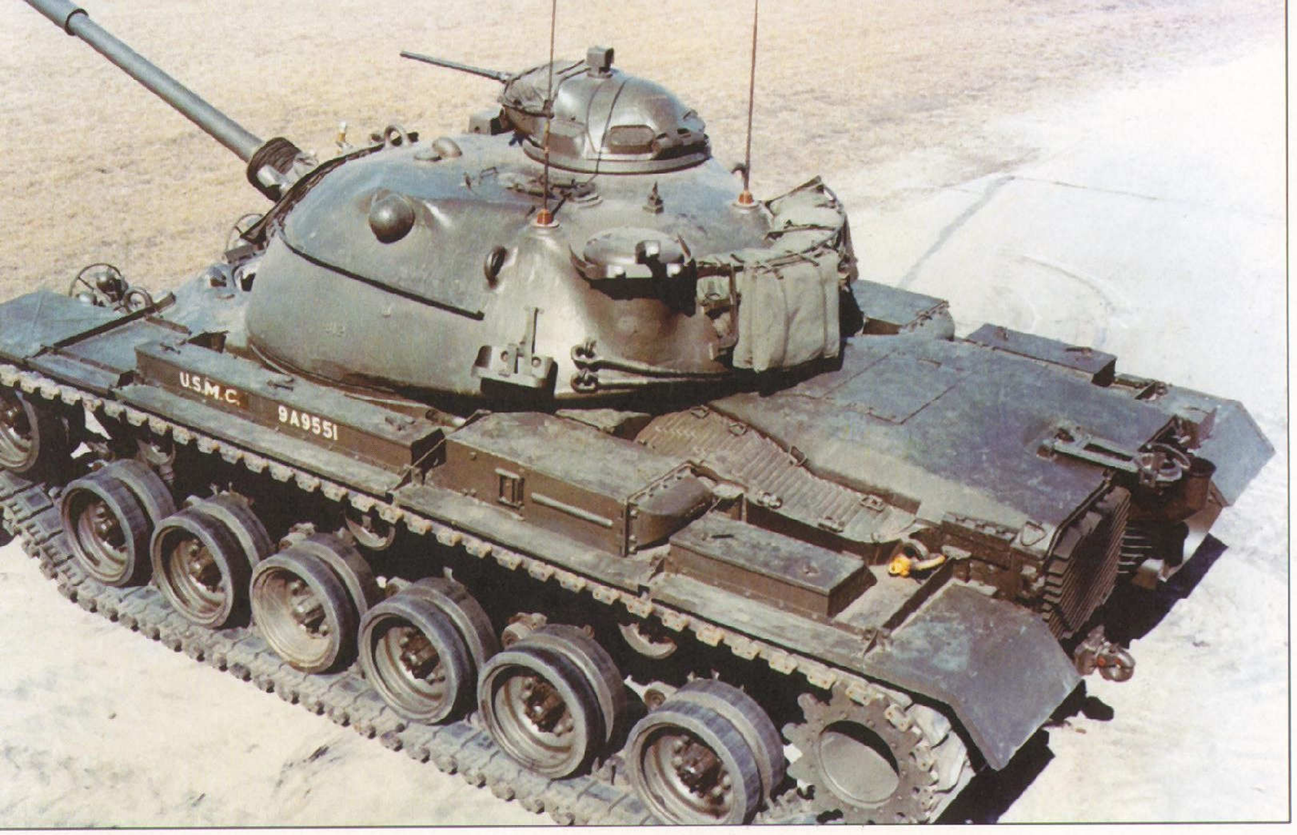
Continental redesigned its big V-12 to incorporate fuel injection and more compact redesigned oil coolers. The new engine was designated model AVI-1790-8, and the tanks incorporating this engine were designated M48A2. The smaller oil cooler made the engine much more compact, allowing an increase in fuel capacity to 335 gallons. (TACOM LCMC History Office)

The M48A2 entered production in 1956, and was built by both Chrysler and Alco Products (formerly American Locomotive Company). The engine deck and hull rear were of a completely different design from those used previously, and the fenders were restyled as well. The track-tensioning idler that characterized this model is visible between the drive sprocket and last road wheel. (Patton Museum)

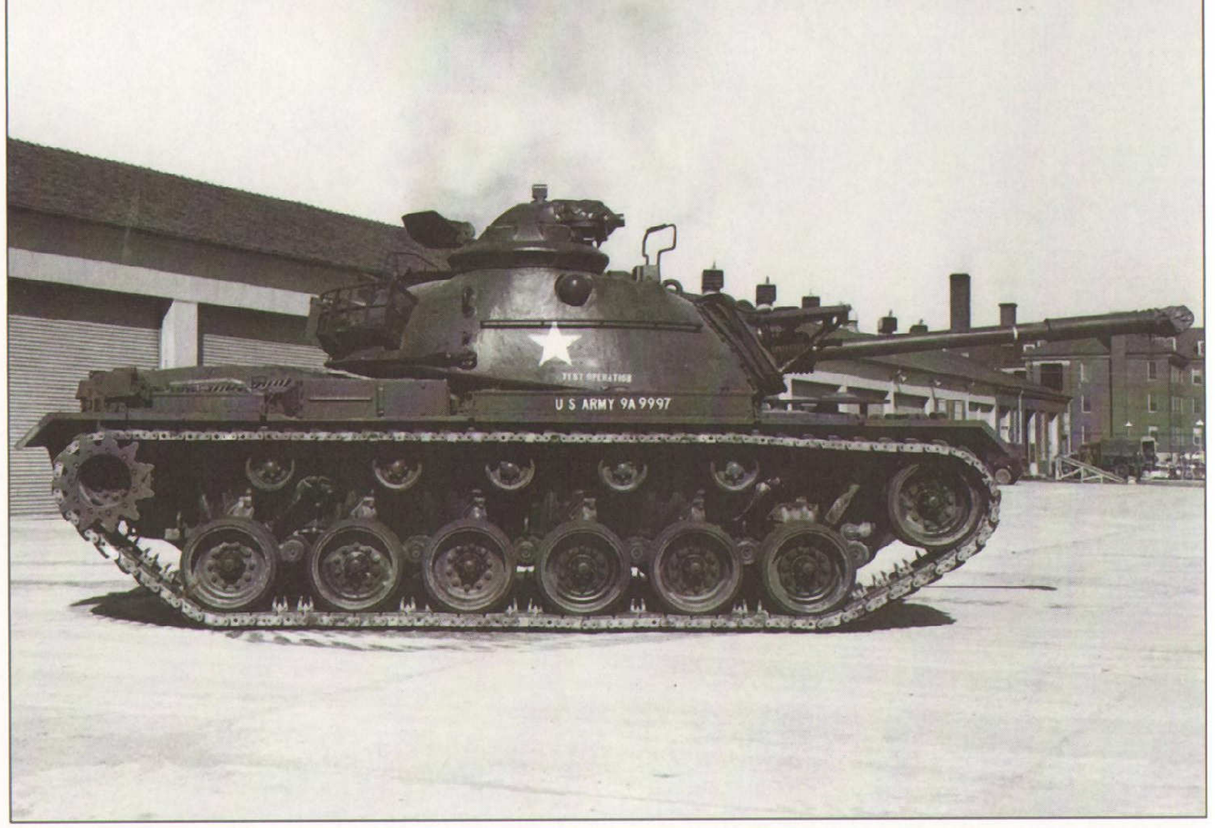
The M48A2C is distinguished from the M48A2 by the absence of the track-tensioning idler. The A2C also deleted the M13A1 stereoscopic rangefinder in favor of an easier-to-use M17C coincidence model. The bore evacuator was slightly enlarged as well. Out of 2,328 M48A2s, 1,344 were updated to the M48A2C standard. (Patton Museum)

The infrared signatures of the A2 and A2Cs were less than that of the earlier vehicles due to the redesigned grilles and louvers of the hull rear. Exhaust gases, which previously had exited just behind the turret, now traveled through a box-like tunnel atop the engine deck before exiting the grilles at the rear of the tank. (Patton Museum)

In June of 1958 army policy was changed to permit the use of Diesel as the primary fuel for combat vehicles, if such a fuel would contribute significantly to fuel economy. Continental quickly responded by developing a Diesel version of its V-12 tank engine, which when fitted to the Patton 48 resulted in 60% improvement in fuel economy, with corresponding increase in range. This Diesel powerplant was chosen for the forthcoming M60, and in turn the decision was made to retrofit the M60 engine/transmission combination to older M48A1s, resulting in the "new" tank – model M48A3.

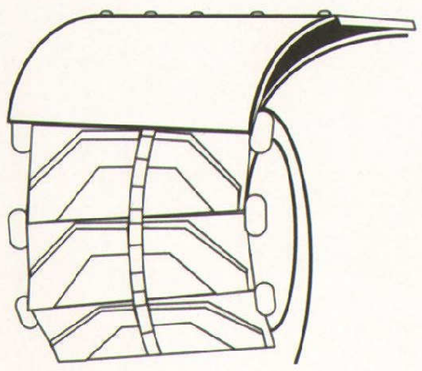


Under the M48A1E1 project, a 105mm main weapon and a Diesel powerplant were installed and other improvements made, but then ammunition costs caused that project to be aborted. Two of the six M48A1E1 vehicles were rearmed with 90mm guns while other E1 improvements were retained, resulting in the M48A1E2 shown here. These two became the pilots of the M48A3 program. The three return rollers distinguish it from the production M48A3 vehicles, with their five return rollers. The engine deck, however, shown here, is the same as that used on production M48A3 vehicles. (Patton Museum)

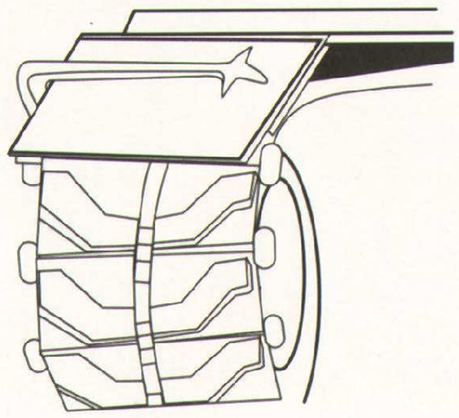


The machine gun deflector is visible on the turret of this M48A3 (Model B). The deflector prevented the cupola-mounted machine gun from firing into the back of the searchlight (not fitted in this photo). Like the standard M48A3, the Model B had five return rollers per side, but these later tanks differed in details such as lighting and telephone systems, details of the rear grille doors and most obviously the spacer ring between cupola and turret. These vehicles also had an enlarged cupola hatch. All these changes were ultimately made to earlier M48A3s as well, and the Model B designation was dropped.

Fenders

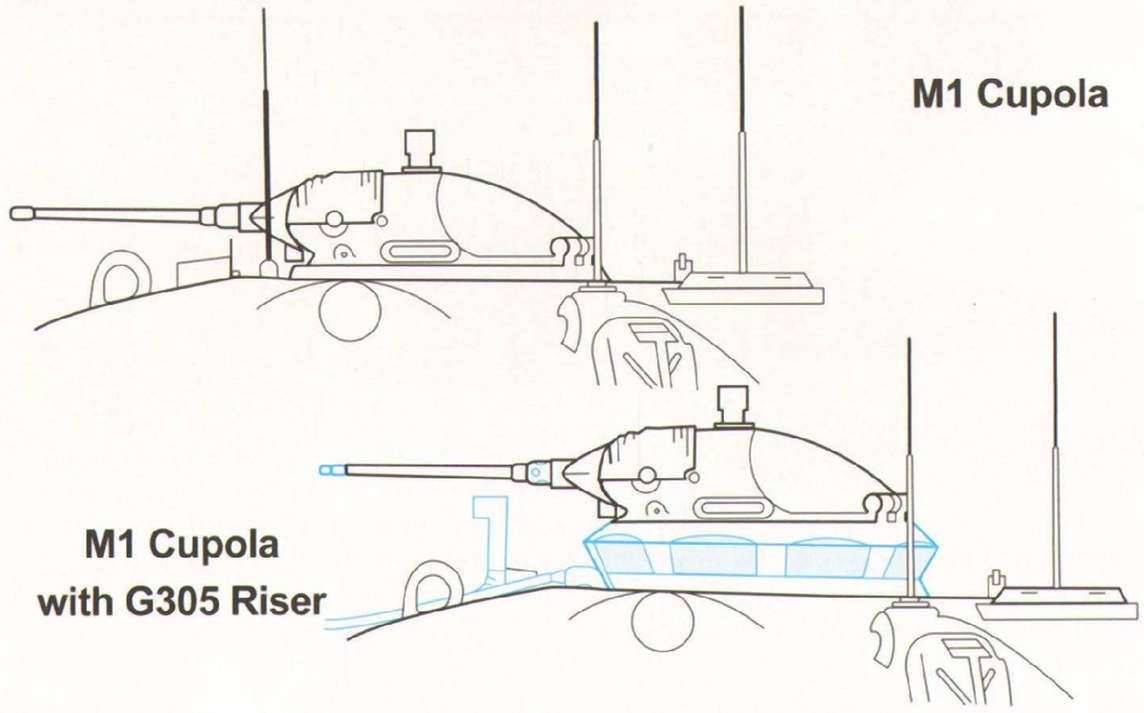


M48A1



M48A3

Cupolas



Marines equipped with M48A3s arrived in Vietnam via landing craft on 9 March 1965. They were quickly followed by the arrival of Army tankers with their Pattons, such as these 11th Armored Cavalry Regiment tanks being unloaded from the USS *American Robin* at Long Binh on 15 September 1966.

Mounted above the gun on many of the M48A3s operating in Vietnam was an AN/VSS-1 Xenon searchlight, such as this one being cleaned on a "D" Company, 1st Squadron, 11th Armored Calvary Regiment tank in Long Binh on 23 October 1966.

This B Company, 69th Armor M48A3 is doubling as a troop transport during Operation Lincoln south of Pleiku on 27 March 1966. The tank carries its full complement of fenders, which are undamaged, indicative of its recent arrival in Vietnam. (Patton Museum)

A Patton moves quickly through an old rubber plantation near Xuân Lộc during a search and destroy mission in January 1967. One rear fender has been crumpled, and the other is largely missing from this G Troop, 2nd Squadron, 11th Armored Cavalry Regiment vehicle.

An M48A3 from C Company, 2nd Battalion, 34th Armored Regiment waits for mines to be cleared in March 1967.

A pair of spare road wheels are stowed on the fenders of this C Company, 2nd Battalion, 34th Armor Regiment M48A3, which lacks the spotlight above the main gun.

Beehive rounds were used extensively in Vietnam, as seen here. This 34th Armored Regiment Patton fires such a round into the vegetation alongside the road during a convoy operation in March 1967.

Three M48A3s storm through Tây Ninh Province with machine guns blazing during Operation Junction City on 19 March 1967. The 82-day operation, supported by armor, was the largest U.S. airborne operation since "Market Garden" during World War II.

The dense jungles of Vietnam led many to believe the terrain was unsuited to tank operations – but the need for heavy mobile fire support forced this idea to be challenged. This Patton is taking part in Operation Pershing near Truong Lin, Bình Định Province, northeast of An Khê in June of 1967. There is Vietnamese stenciling on the turret side.

The North Vietnamese had only limited armored assets – primarily Soviet-built APCs. The M48 family with its thick armor and powerful gun could easily best any other armored vehicle encountered and make short work of most gun emplacements as well. This Patton is involved in Operation Pershing about 90km northeast of An Khê.

This tank from the 3rd Marine Tank Battalion, shown in Dong Ha, is equipped with the early style 18-inch Crouse-Hinds searchlight. The driver's periscopes were in the raised position when this photo was taken on 2 March 1967.

This Marine M48A3 is equipped with the more common AN/VSS-1 Xenon searchlight. An improvised shelter has been installed over the commander's cupola as protection against rain. The shelter would dangerously restrict vision while operating in the field, but this Patton, and the Ontos visible in the background, were defending the Khe Sanh perimeter when photographed on 26 November 1967. (Patton Museum)

This M48A3 tank attached to Charlie Company, 1st Marine Tank Battalion, was photographed while patrolling a beach in 1968. The "FY 67 3E" markings on the right front fender indicate that this tank underwent 3rd-echelon maintenance during fiscal year 1967. Cases of rations are stacked on both fenders.

A column of M48A3s and M113s maneuvers through a Vietnamese city street in February 1968. The commander's .50 caliber machine gun has been relocated outside the cupola, and the loader has been furnished with his own machine gun as well. The red dust covering the vehicle – particularly on the suspension – is characteristic of vehicles operating in the Central Highlands.

On each side of the turret "Claustrophobia" is stenciled in red and white. On the rear of the turret are strapped extra boots and what appear to be two purloined 40mm Bofors gun ammo boxes. Such boxes made ideal large water-proof stowage containers. Ration cases are stacked on the engine deck, and ammo boxes cover the fenders. Lashed securely to the commander's cupola, and resting on the stanchion on the turret side is a purloined thermos.

"Claustrophobia" leads a column of APCs through the Vietnamese countryside. In Vietnam, where the North Vietnamese and Việt Cộng forces had only minimal armor, the U.S. military relied on tanks to provide mobile fire support for infantry and convoy operations. This situation was in contrast to the tank-versus-tank duels that were a hallmark of combat in World War II and Korea.

"Claustrophobia" at Fire Base Bastogne in April 1968 has a moderate amount of additional stowage, including an orange plastic cooler on the rear of the turret and what appears to be a slave starting cable wrapped around the headlight guards.

This M48A3 of A Troop, 1st Squadron, 1st Cavalry, Americal Division, became mired while trying to cross a ditch in the water-logged area 15km northwest of Hill 29 on 2 August 1968. While most of Vietnam was suitable for armor operations, some mountains and marshes were major impediments. The crew has opened their rations while waiting for recovery.

Mud flies into the air after a C4 demolition charge is set off to clear some of the mud from beneath the mired tank. The weight of the Patton's armor was a double edged sword. The lighter M113 likely would not have become mired here – and if it had, it would have been extricated by a heavy lift helicopter. However, the M48's armor allowed charges to be used to clear mud, as here.

After the charge has broken the suction of the mud, and cleared some of the soil from the tank's undercarriage, no fewer than six M113 armored personnel carriers form a daisy chain and prepare to give the mired tank a pull. Such operations were fatiguing to both the men and the equipment, but were part and parcel of combat operations in Vietnam.

General Data

MODEL	M48	M48A1	M48A2C	M48A3	M67A2
FIGHTING WEIGHT	99,000 pounds	104,000 pounds	105,000 pounds	104,000 pounds	104,000 pounds
LENGTH	332 9/16 inches	343 23/32 inches	342 inches	342 inches	342 inches
WIDTH	148 inches	143 inches	143 inches	143 inches	143 inches
HEIGHT	107.5 inches	123 5/16 inches	121 3/4 inches	121 3/4 inches	121 3/4 inches
TRACK	115 shoes	115 shoes	115 shoes	115 shoes	115 shoes
STD TRACK WIDTH	28 inches	28 inches	28 inches	28 inches	28 inches
CREW	4	4	4	4	3
MAX SPEED	26 miles per hour	26 miles per hour	30 miles per hour	30 miles per hour	30 miles per hour
FUEL CAPY	200 gallons	200 gallons	335 gallons	335 gallons	335 gallons
RANGE	70 miles	70 miles	160 miles	160 miles	160 miles
ELECTRICAL	24 volt negative ground	24 volt negative ground	24 volt negative ground	24 volt negative ground	24 volt negative ground
TRANSMISSION SPEEDS	2 Forward, 1 Reverse	2 Forward, 1 Reverse	2 Forward, 1 Reverse	2 Forward, 1 Reverse	2 Forward, 1 Reverse

Diesel smoke boiling from the exhaust grilles, the roaring Continental AVDS-1790-2A of the Patton works in concert with the Detroit Diesel engines of the APCs as the tank pulls free from the mire.

An M48A3 leads an M113 along Highway 1 returning to their base in August 1968. Both vehicles were assigned to A Troop, 4th Battalion, 12th Cavalry, 1st Infantry Brigade, 5th Infantry Division. The vehicles had been deployed to guard the road the night before.

"Willie," a well-kept M48A3 from A Troop, 4th Battalion, 12th Cavalry, 1st Infantry Brigade, moves into position alongside an M113 ACAV. The two vehicles were deployed in August 1968 to guard the famed Highway 1, a prime Việt Cộng target.

This view of the commander's position on "Willie" reveals that this is an early M48A3 without the G305 turret riser. The M2 Heavy Barrel (HB) machine gun has been remounted atop the cupola, and the original gun port sealed. A broad range of stowage is carried, from an M7 bayonet on the side of the cupola to a cot in the turret bustle rack.

Crewmen replace the track of this 4th Cavalry M48A3 in the mud outside of Saigon in August 1968. Not only were the tracks vulnerable to mine blasts, but, like the tires of a car, they also had to be replaced periodically due to normal wear and tear. The searchlight cover on this tank carries the legend "COOL BUT CRUEL." (Patton Museum)

Photographed in November 1968, this United States Marine Corps M48A3 is equipped with the G305 turret riser. Typical of servicemen, the Marines manning this tank have "customized" it. From the "His Mistake ->" stenciling on the gun tube to the 40mm ammo can lashed to the stowage rack (providing weather-proof stowage) and the ubiquitous Mermite can slung on the side, the tank is no longer "the Corps'" – it's theirs.

Three M48A3s go "jungle busting" in Vietnam. The 750 horsepower Diesel engine combined with the 52-ton gross weight of the Patton meant that even the heaviest vegetation could simply be waded down. Pushing through heavy brush like this, even at low speeds, meant that all the 'extra' gear that crews stowed on the outside of their vehicles had to be securely tied to the tank, or limbs would simply rake the material off into the jungle. (Patton Museum)

Other U.S. tracked vehicles in Vietnam, specifically the M113 and M551, would have struggled to break this trail, risking engine overheating or immobilization. The VC sometimes rigged antipersonnel mines in the brush to target vehicle riders, and seasoned veterans rarely let their legs dangle over the sides or front of the vehicles. (Patton Museum)

The name "Hell's Henchmen" stenciled on the gun tubes of these M48A3s identifies them as belonging to H Troop, 2nd Squadron, 11th Armored Cavalry Regiment. At the center of the photo is H Troop commander Captain Robert D. Hurt III. (Patton Museum)

Extra track links on the turret sides not only provided spares of this commonly needed item, but also formed a sort of stand-off protection against RPGs. If the RPG struck the spare links, the energy of the shaped-charge warhead would be dissipated before reaching the turret proper. (Patton Museum)

The crew of this 11th Armored Cavalry Regiment (ACR) M48A3 relaxes during a break. Protruding from the side of the turret beneath the Mermite can is the unused stowage bracket for the 2.2 kilowatt Xenon searchlight. Other stowage on the vehicle includes a litter lying across the main gun travel support and two jerry cans lashed across the jerry can bracket. (Patton Museum)

This M48A3 sports an elaborate, colorful paint job on the front of its hull. The forward-most portion of the vehicle's fenders have been lost to the rigors of field operations. It is unclear exactly how the crew has secured their case of "Meal, Combat, Individual" to the side of the turret. (Chris Harlow)

"Wild One 4," was operated by the 919th Engineers. Engineers, charged with clearing brush, building bridges, and significantly ridding the roads of mines, were under constant threat of attack and the tanks proved a significant asset to these troops. (Chris Harlow)

The Latin quote from Caesar painted on the spotlight cover – "VENI VIDI VICI" – was probably lost on the VC – and most U.S. troops as well, but the translation "I came, I saw, I conquered" typified the feelings of most Patton crewmen in Vietnam. (Don F. Pratt Museum)

The crew of this M48A3 doing perimeter defense work at a fire support base has rigged shelter halves as sunshades over the commander's cupola and on the ground behind the vehicle. Concertina wire is stowed on the rear grilles, and the rear fenders are covered with jerry cans and ration cases. (Don F. Pratt Museum)

Virtually new, this M48A3 rests in a motorpool. No doubt soon the cupola-mounted machine gun will be relocated to a position atop the cupola, as was the custom in theater. Only the ration cases scattered over the vehicle reveal the fact that the vehicle has even been issued. Not even the unit markings have yet been applied. Interestingly, however, the outer corners of the front fenders have been cut off at an angle with a torch. (Chris Harlow)

Maintenance personnel use an M543 5-ton medium wrecker to pull a power pack (the engine-transmission assembly) in Vietnam. The vehicle being serviced is an M728 combat engineer vehicle, based on the M60 chassis, but the powerpack and rear hull configuration duplicate those of the M48A3. (Chris Harlow)

Troopers from the 101st Airborne Division hitch a ride on an M48A3, the men and their gear completely obscuring the turret and engine deck. (Don F. Pratt Museum)

Loaded with men, extra jerry cans, ration cases, and ammo boxes, this M48A3 probably well exceeds the design weight of 107,000 pounds. At the rated weight, the M48A3 exerted 12.1 psi ground pressure, the weight being distributed along 79 28-inch-wide track shoes contacting the ground along 157.5 inches. (Don F. Pratt Museum)

The loader's position of this M48A3 has been fitted with an M60 machine gun, mounted with an M113 cupola bracket. Crews in Vietnam rarely operated "buttoned up" – the heat inside the vehicles being almost unbearable. Thus, with more eyes outside, it was only natural more weapons would be fitted. (TACOM LCMC History Office)

An M48A3 tank from the 1st Battalion, 5th Mechanized Division, moves up a beach in Quảng Trị Province during Operation Fisher on 6 January 1969. The five-link section of spare track on the turret side is somewhat longer than the norm.

This M48A3, dubbed "The Original Flower Children," rolls into the imperial walled city of Huế on 12 February 1968. The tankers are supporting the 1st Battalion, 5th Marines during the bloody contest for the city. Like most tankers, the crew of this vehicle has strapped a range of gear to the outside of their vehicle. (Marine Corps Historical Center)

Tank A51 – the Alpha Company Commander's ride – moves through Huế on 12 February 1968. An M60 machine gun team takes shelter beside the bulk of the M48A3 on the ground. During the fighting in the Imperial City the tankers and infantrymen relied on each other for mutual protection. The gun tube sports the name "Mad Harlot," and there are two kill marks on the turret side just forward of the coincidence rangefinder.

While most Pattons operated in Vietnam were the Diesel-powered M48A3 variant, a few of the gasoline-fueled M48A2 versions were used following armor losses sustained repelling the 1968 Tết Offensive. This 1st Battalion, 5th Mechanized Division M48A2 was photographed 6 January 1969 during Operation Fisher. (Patton Museum)

Tank Commander Corporal Robert G. Olsen and Loader Corporal Charles S. Yesmen both from the 3rd Platoon, C Company, 1st Marine Tank Battalion, hang on tight as their tank climbs out of a big ditch it had to cross during Operation Pipestone Canyon, 8 miles south of Danang, on 2 June 1969. (Patton Museum)

Every available inch of B-43 "Funky Ride," an H Company, 2nd Battalion, 5th Marines tank, has been covered with extra stowage during Operation Arizona. A case of grenades is on the right rear fender, near no fewer than 13 jerry cans. The rear of the turret is covered in .50 caliber ammo cans, with 7.62mm cans wedged between the spare track links and the turret. This scene was captured on film 16 May 1969.

In this view of the 3rd Platoon, C Company, 1st Marine Tank Battalion tank also seen at left, the missing left front fender panel is more readily apparent, as is the five-gallon fuel can leaning against the left headlamp cluster.

Tanks from C Company, 1st Marine Tank Battalion leave Con Thiên with elements of Lima Company 3rd Battalion, 4th Marines on a corridor patrol on 20 January 1969. The three visible tank crew members wear CVC helmets, while the tank riders sport caps or M1 helmets.

During a break on 23 June 1969, a crewman rests atop his Company B, 177th Battalion, 5th Infantry Division (Mechanized) M48A3 named "Steel Tigers," during Operation Utah Mesa in the Khe Sanh area.

An M48A3 with round searchlight fords the An Lão River near Bồng Sơn as part of Operation Pershing in April 1967.

Bridges were key points in Vietnam, and tanks were often employed to defend these critical supply routes. Such is the case with this M48A3 defending a bridge on the road to Pleiku.

Soldiers have got to eat – and seemingly rarely trust others to feed them. On top of the turret of the tank in the background can be seen one of the coveted Mermite cans – insulated containers capable of keeping food (or beverages) hot or cold. On the engine deck of the disabled tank in the foreground appear to be two cases of rations. Everything has been coated with the red dust of Vietnam.

This tank was disabled when it ran over an antitank mine on 27 December 1969, just outside Camp Eunice. The damage to the first roadwheel is evident, and the track has naturally been thrown.

In addition to mine damage, the fenders have received a battering from normal use. There is extensive additional stowage on the engine deck and turret. The unit markings have been applied free hand, rather than with stencils.

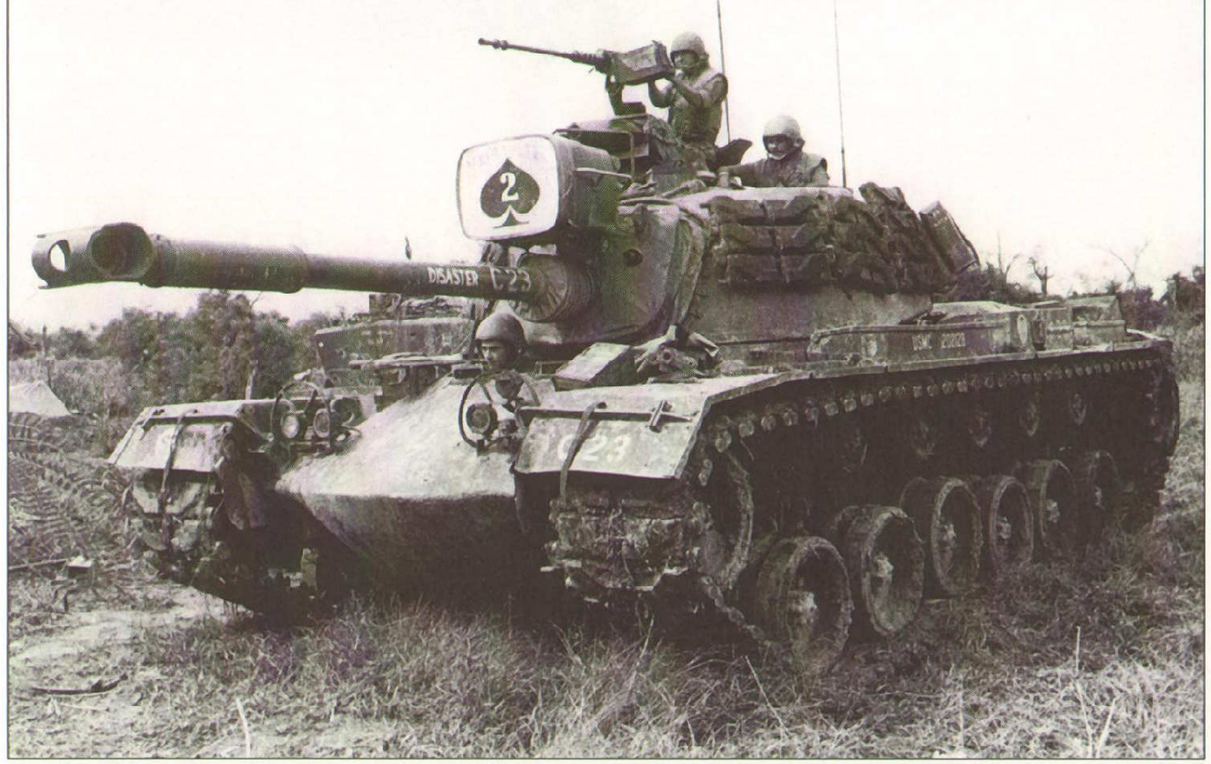
It appears that these GIs are connecting the damaged track to the rear towing shackle in order to drag the track back to camp behind the disabled tank, which is being taken under tow by another M48A3.

Parts of damaged track links were scattered around the area by the mine explosion, which also damaged wheels. The explosive device was estimated to be a 23-pound antitank mine. There is a litter in the upper right of the photo.

Beyond bending the road wheel, the blast knocked off the hub cap, revealing the bearings and spindle on which the wheel turns. Members of the 984th Land Clearing Co., 11th Cavalry, look for additional damage prior to towing the tank away.

This tank has been knocked out and the final road wheel station blown completely off. There has also been damage to the fenders and engine deck. (TACOM LCMC History Office)

Crews became adept at performing routine maintenance and minor repairs themselves while operating in the field. Here members of the 25th Infantry Division repair a compensating and idler wheel in July 1970.



With the name "Disaster" inscribed on the gun tube, this 2nd Platoon, C Company, 1st Marine Tank Battalion, USMC, late model M48A3 prepares to move out 15 miles Southeast of Đà Nẵng on 12 February 1970. The commander's machine gun is mounted outside the cupola, despite a Marine Corps directive forbidding this. (Patton Museum)

A Marine M48A3 from Company C, 1st Marine Tank Battalion pushes through the elephant grass near Đà Nẵng while acting as the forward elements for Company F, 2nd Battalion, 5th Marines on 13 May 1970. Marine infantry hitch a ride on the tank, avoiding wading through the grass themselves.

Two tanks of Company C, 1st Tank Battalion work with Company H, 2nd Battalion, 5th Marines, while they are sweeping north of Combat Base An Hoa, 20 miles southwest of Đà Nẵng, on 20 May 1970. The leading edges of the fenders of both tanks are somewhat battered.

These 25th Infantry Division Maintenance personnel cut away damaged portions of the fender of this M48A3 in Vietnam in August 1970. Despite efforts to strengthen the fenders, they remained susceptible to damage from heavy vegetation. Presumably the small arms ammunition boxes sitting just inches away no longer contain munitions.

The G305 turret riser can be plainly seen here. This riser provided the commander a 360° range of vision from inside the vehicle. In Vietnam, most TCs (tank commanders) fought outside the turret, negating the benefit of this riser. The machine gun on this tank has been relocated to a position on top of the cupola to facilitate this type of fighting.

The commander's machine gun on this tank has also been relocated, although using a different style of mounting than the one shown at left. Extra boxes of ammo, already open, are kept at the ready on the turret roof.

Two M48A3s sit next to an M42 Duster in the Class 7 storage area of the 625th Supply and Service Company on Wunder Beach in June 1970. During the Vietnam war, the Pattons were cycled back to depots in Japan for overhaul.

Members of H Troop, 11th Armored Cavalry, aboard an M48A3 tank, take a break during combat operations north of Snoul, Cambodia, on 6 May 1970. The tarp over the stowage rack not only protected items from rain, but also from snakes and insects dropping in from brush and taking residence in the gear.

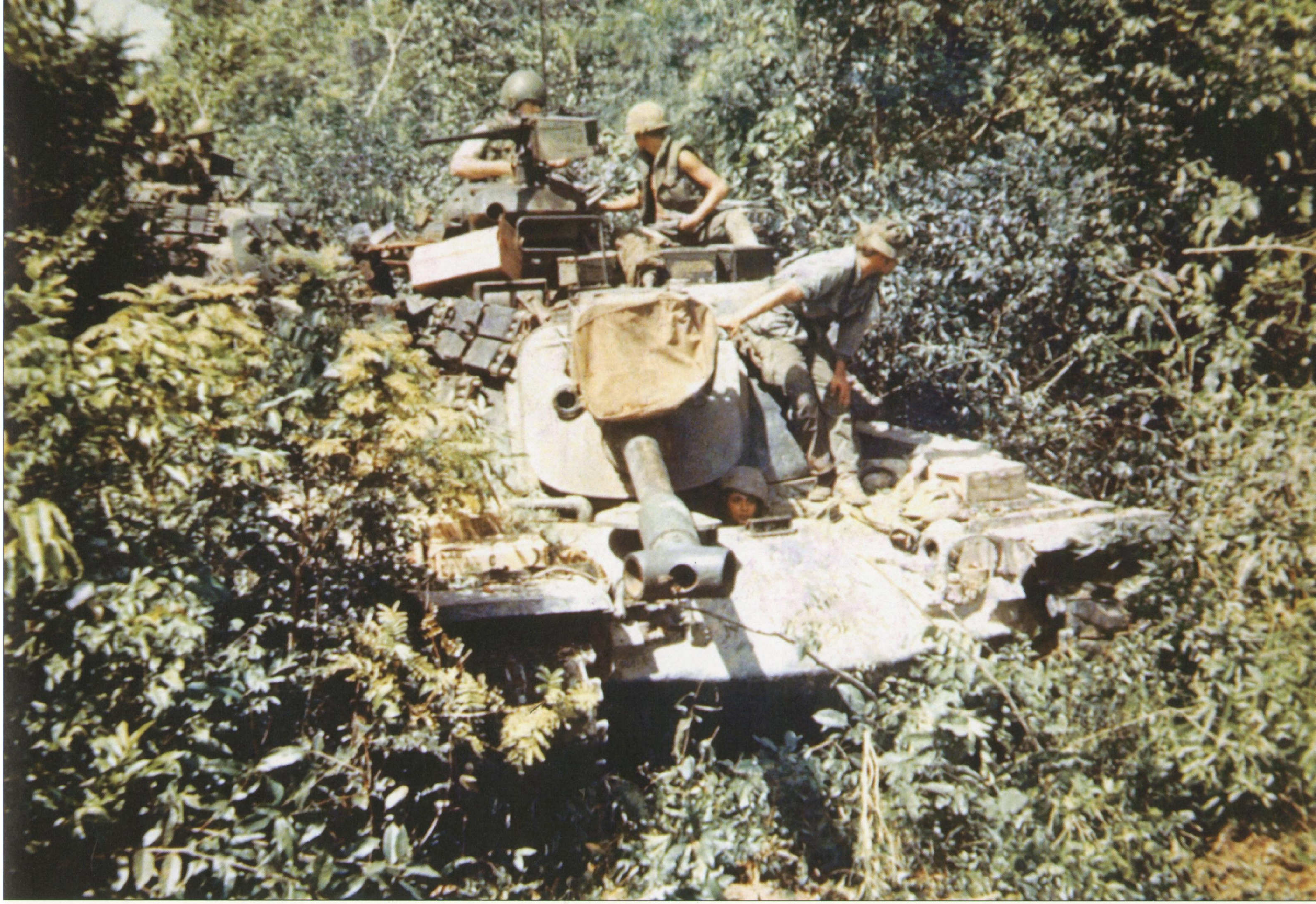
A M48A3 and its crew join M113A1 crews of the 2nd Battalion, 47th Infantry Regiment (Mechanized), 9th Infantry Division set up an overnight site during operations in the Chalang and Srok (District) Memot, Cambodia, in the first half of May 1970.

Many structures in Cambodia would succumb as easily to the mass of the M48A3 as did the vegetation of the nation. Here, units of E Troop, 11th Armored Cavalry, push through the outskirts of Snoul on 4 May 1970.

An OH-6A light observation helicopter passes overhead as members of E Troop, 11th Armored Cavalry ride M48A3 tanks past damaged buildings on the outskirts of Snoul, Cambodia, on 4 May 1970.

M48A3 tanks from M Troop, 3rd Squadron, 11th Armored Cavalry Regiment, move across an open field during a reconnaissance-in-force north of Fire Support Base Bandit II. This tank carries numerous ammunition boxes on its fenders, and ration cases on its turret, during the late November 1970 operation.

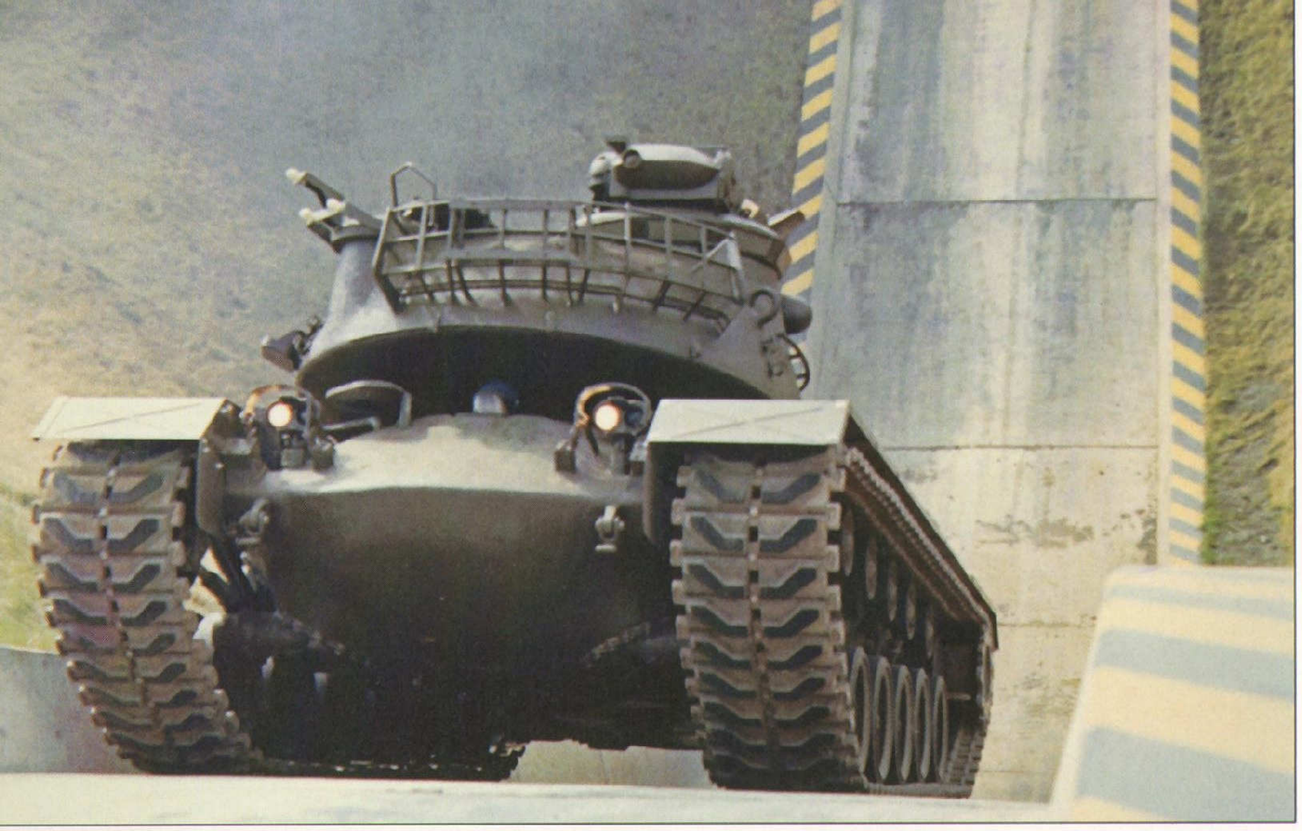
This M48A3 of the 3rd Squadron, 11th Armored Cavalry Regiment, operating from Fire Support Base Bandit II in 1970, reminds us that the combat vehicle has not been built whose crew felt it had enough room for stowage, enough armor, or carried enough ammo. Ammo cans, track links, and ration cases cover virtually every inch of the tank.



Gls warily eye the the surrounding brush as two M48A3s maneuver through the jungle of Vietnam. A canvas cover over the Xenon searchlight prevents glare to minimize detection, and a case of grenades is at the feet of one of the lookouts. This M48A3 tank from M Troop, 3rd Squadron, 11th Armored Cavalry Regiment, was photographed during a reconnaissance-in-force mission north of Fire Support Base Bandit II in late November 1970.

The predominant piece of NVA armor was the Soviet PT-76 amphibious tank. This example of such a vehicle was destroyed during the only NVA-vs.-U.S. tank battle of the war, the Việt Cộng assault on Ben Het Special Forces camp on 4 March 1970. This action cost the NVA two PT-76s and a BTR-50PK amphibious armored personnel carrier, without loss of a U.S. tank. In an earlier action an M48A3 knocked out another PT-76 before the VC crew could locate the threat.

Empty cartridge cases litter the ground as tanks of the 11th Armored Cavalry Regiment test fire their guns on the firing range before moving to the stand-down area on 23 January 1971. All three of these tanks are covered with the red dust of Vietnam, and considerable additional stowage.



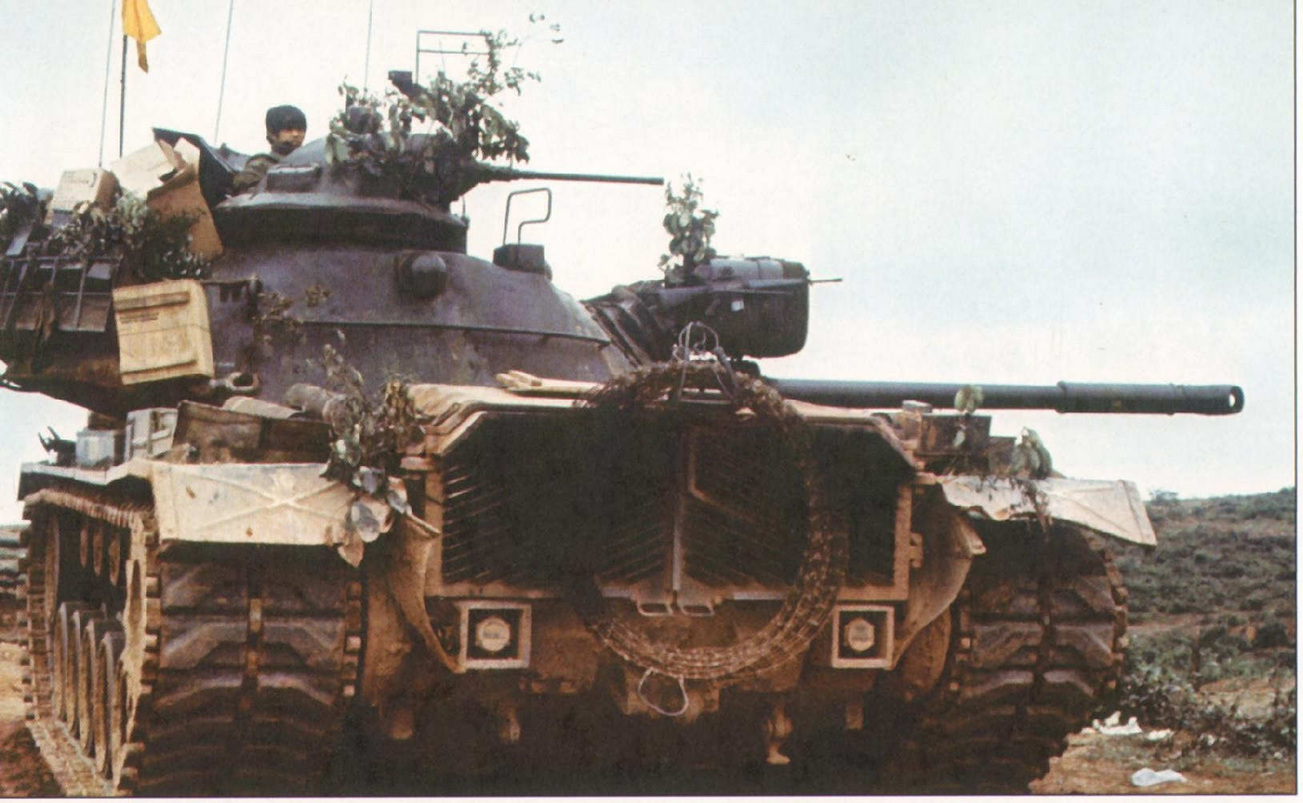
This M48A3 has just completed rebuild at the Track Vehicle Reclamation Center in Sagami, Japan. After navigating a test course, including this 60% slope, the vehicle will be cycled back to Vietnam.

An M48A3 from the 197th Infantry Brigade fires during a demonstration of night defense perimeter techniques employed in Vietnam during a training exercise at Fort Benning, Georgia in June 1971. The M48A3 offered the most protection of any US armor fielded in Vietnam, and its firepower was often critical to defending forward bases.

Rocket Propelled Grenades (RPGs) were a constant threat – and capable of inflicting crew casualties. Many tankers fitted their vehicles with various improvised devices aimed at protecting themselves from RPG attack. The turret of this 3rd Squadron, 4th Cavalry M48A3 is completely covered in sandbags for just this reason. (Patton Museum)

The M48A3, which could sustain a speed of 30 MPH while operating on roads, proved to be an effective means of delivering a combined arms armor-infantry team to the battlefield.

The Patton remained in Vietnam after the U.S. departed. These M48A3s were operated by the Army of the Republic of Vietnam (ARVN), and are seen here in position along National Highway 9 in April 1972. (Patton Museum)



The ARVN was supplied large numbers of the M48A3, which typically were in the standard as-issued configuration like this one with the cupola-mounted machine gun, rather than the externally-mounted weapon favored by Americans. (Patton Museum)

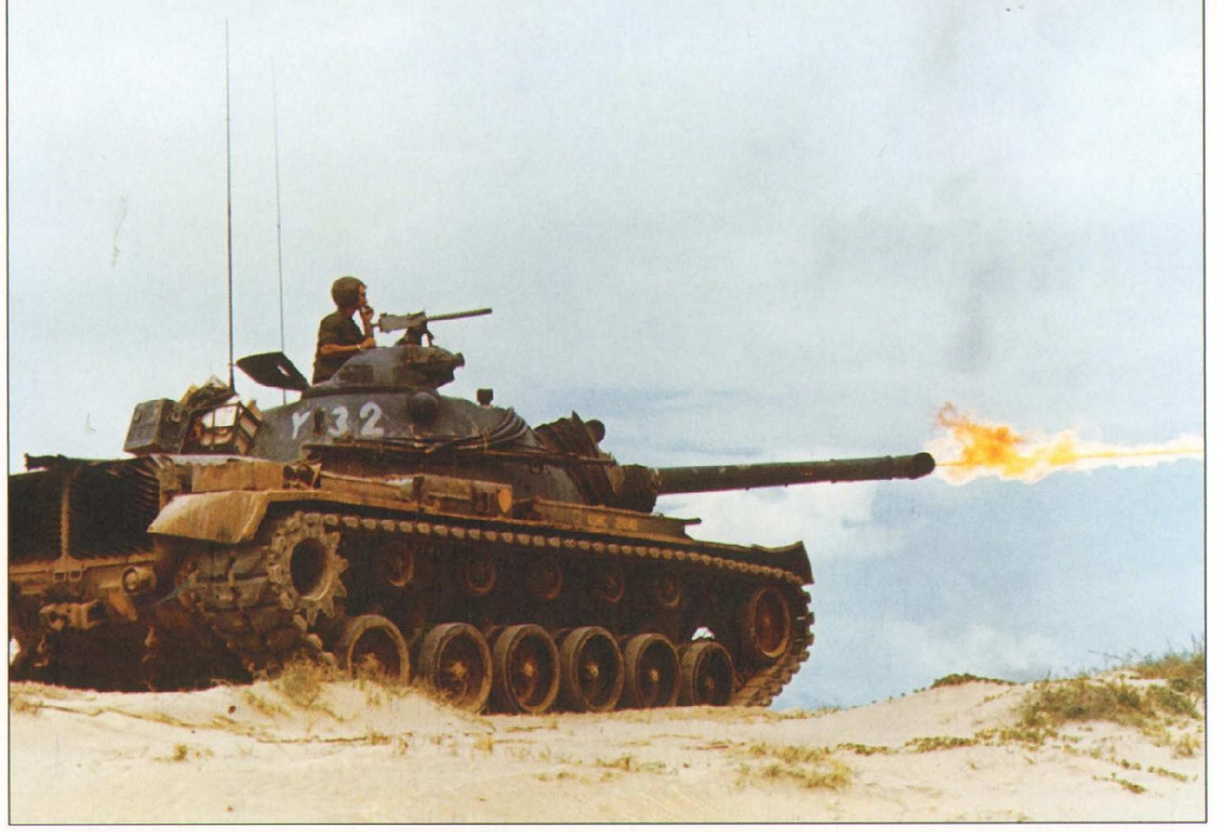
The ARVN tankers proved themselves most proficient in the use of the M48A3, but were plagued by a shortage of spare parts – and equally importantly, by an overwhelming numerical disadvantage to Communist armor after the 1973 cease-fire. (Patton Museum)

In some instances the lack of spares reduced the Pattons to use as pillboxes. The April 1972 introduction of the 9M14M Malyutka wire-guided antitank missile brought a new threat to the Patton, and several were lost to these Soviet-made missiles in the succeeding months. (Patton Museum)

This ARVN 20th Tank Regiment M48A3 was photographed in April 1972 while in a defensive position on the Đông Hà Line. ARVN use of the Patton was hampered by the lack of adequate quantities of support equipment, such as the M88 retriever.

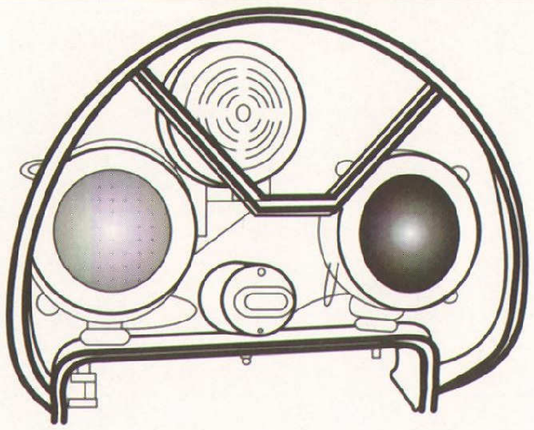
The primary variant of the M48A3 used in Vietnam was the M67A2 flame tank, used by the Marine Corps. The flame projector of these deadly vehicles was disguised as a standard cannon barrel, albeit slightly shorter. The flame gun had an elevation and depression range of +45 to –12 degrees – which was lower than the gun tank's barrel could depress. This difference required the tops of the light guards of the flame tanks to be flattened in order to provide clearance. This vehicle was photographed in Vietnam during 1968.

Operating at a pressure of 300 psi, the M7A1-6 flame projector in the M67A2 could fire the thickened fuel up to 280 yards when using a 7/8-inch nozzle. The vehicle required no loader, so it had a three-man crew. The loader's hatch was used to access the flamethrower fueling and charging controls.

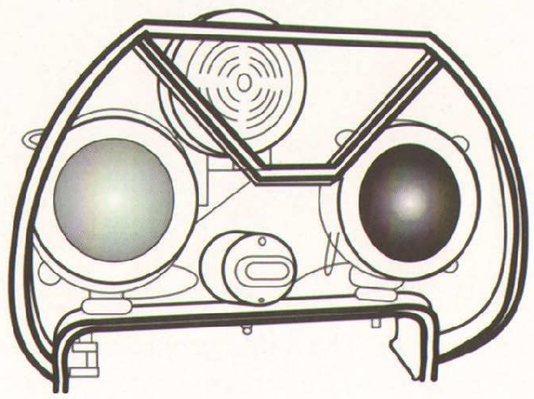


The gunner fired both the flame gun and the M73 7.62 mm coaxial machine gun using the XM30 periscopic sight. This provided a 48-degree field of vision and 1.5 times magnification. Seventy-three M67A2s like this 1st Marine Division vehicle were produced.

Headlight Brush Guards



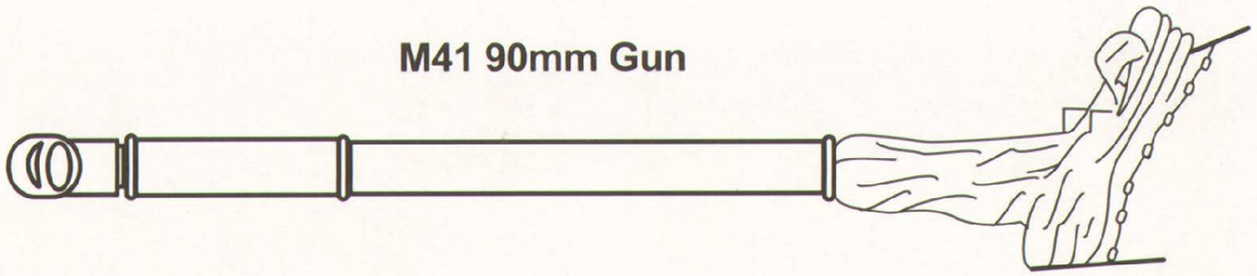
M48A3



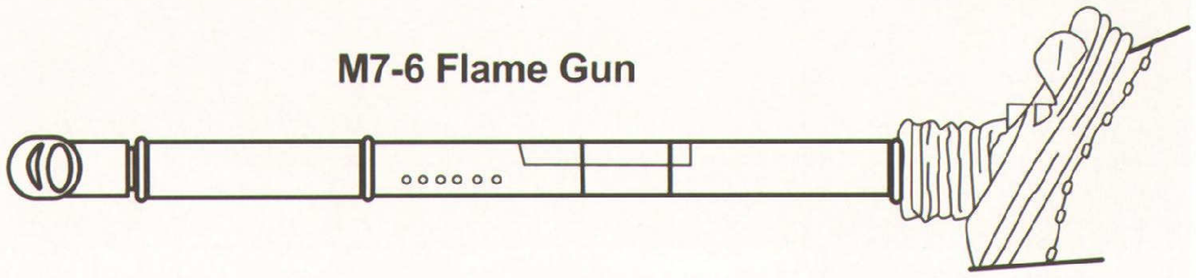
M67A2

Barrels

M41 90mm Gun



M7-6 Flame Gun



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